AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application: **(AS ON AMENDED SHEET(S) UNDER ART. 19)**

1. (Currently amended) A method of using a device that uses a relaxor ferroelectric solid solution single crystal, wherein the relaxor ferroelectric solid solution single crystal is capable of making transitions, at temperatures below the Curie temperature, between a first state which has a high permittivity and blocks optical transmission and a second state which has a low permittivity and allows optical transmission, and the relaxor ferroelectric solid solution single crystal undergoes a transition to the second state if an electric field above a threshold is applied in the first state and undergoes a transition to the first state if heated to or above the Curie temperature in the second state, the method comprising ~~being characterized by~~:

applying an electric field above a threshold to the relaxor ferroelectric solid solution single crystal in the device to cause the relaxor ferroelectric solid solution single crystal to make a transition from the first state to the second state; and

heating the relaxor ferroelectric solid solution single crystal in the device to or above the Curie temperature to cause the relaxor ferroelectric solid solution single crystal to make a transition from the second state to the first state.

2. (Currently amended) The method according to claim 1, ~~characterized in that~~ wherein the relative permittivity of the relaxor ferroelectric solid solution single crystal in the device is 9,000 or above in the first state, and 7,000 or below in the second state.

3. (Currently amended) The method according to claim 1 ~~claim 1 or 2~~, ~~characterized in that~~ wherein the relative permittivity of the relaxor ferroelectric solid solution single crystal in the device is approximately halved when the relaxor ferroelectric solid solution single crystal makes a transition from the first state to the second state.

4. (Currently amended) The method according to claim 1 ~~any one of claims 1 to 3~~, ~~characterized in that~~ wherein the relaxor ferroelectric solid solution single crystal in the device is a pseudocubic crystalline/rhombohedral crystalline phase (001) plate.

5. (Currently amended) The method according to claim 1 ~~any one of claims 1 to 4~~, ~~characterized in that~~ wherein the device is an optical device which uses at least optical transmission characteristics of the relaxor ferroelectric solid solution single crystal.

6. (Currently amended) The method according to claim 5, ~~characterized in that~~ wherein the optical device is an optical memory or light valve.

7. (Currently amended) The method according to claim 5 ~~claim 5 or 6~~, ~~characterized in that~~ wherein the device uses not only the optical transmission characteristics, but also

changes in dielectric characteristics of the relaxor ferroelectric solid solution single crystal taking place with changes in the optical transmission characteristics.

8. (Currently amended) A device that uses a relaxor ferroelectric solid solution single crystal, wherein the relaxor ferroelectric solid solution single crystal is capable of making transitions, at temperatures below the Curie temperature, between a first state which has a high permittivity and blocks optical transmission and a second state which has a low permittivity and allows optical transmission, and the relaxor ferroelectric solid solution single crystal undergoes a transition to the second state if an electric field above a threshold is applied in the first state and undergoes a transition to the first state if heated to or above the Curie temperature in the second state, the device comprising ~~being characterized by~~:

~~means for applying~~ a unit that applies an electric field above a threshold to the relaxor ferroelectric solid solution single crystal in the device to cause the relaxor ferroelectric solid solution single crystal to make a transition from the first state to the second state; and

~~means for heating~~ a unit that heats the relaxor ferroelectric solid solution single crystal in the device to or above the Curie temperature to cause the relaxor ferroelectric solid solution single crystal to make a transition from the second state to the first state.

9. (Currently amended) The device according to claim 8, ~~characterized in that~~ wherein the relative permittivity of the relaxor ferroelectric solid solution single crystal in the device is 9,000 or above in the first state, and 7,000 or below in the second state..

10. (Currently amended) The device according to claim 8 ~~claim 8 or 9~~, ~~characterized in that~~ wherein the relative permittivity of the relaxor ferroelectric solid solution single crystal in the device is approximately halved when the relaxor ferroelectric solid solution single crystal makes a transition from the first state to the second state.

11. (Currently amended) The device according to claim 8 ~~any one of claims 8 to 10~~, ~~characterized in that~~ wherein the relaxor ferroelectric solid solution single crystal in the device is a pseudocubic crystalline/rhombohedral crystalline phase (001) plate.

12. (Currently amended) The device according to claim 8 ~~any one of claims 8 to 11~~, ~~characterized in that~~ wherein the device is an optical device which uses at least optical transmission characteristics of the relaxor ferroelectric solid solution single crystal.

13. (Currently amended) The device according to claim 12, ~~characterized in that~~ wherein the optical device is an optical memory or light valve.

14. (Currently amended) The device according to claim 12 ~~claim 12 or 13~~, ~~characterized in that~~ wherein the device uses not only the optical transmission characteristics, but also

changes in dielectric characteristics of the relaxor ferroelectric solid solution single crystal taking place with changes in the optical transmission characteristics.

Please add new claims 15 to 22 as follows:

15. (New) A light valve that uses a relaxor ferroelectric solid solution single crystal, wherein the relaxor ferroelectric solid solution single crystal is capable of making transitions, at temperatures below the Curie temperature, between a first state which has a high permittivity and blocks optical transmission and a second state which has a low permittivity and allows optical transmission, and the relaxor ferroelectric solid solution single crystal undergoes a transition to the second state if an electric field above a threshold is applied in the first state and undergoes a transition to the first state if heated to or above the Curie temperature in the second state, the light valve comprising:

a unit that applies an electric field above a threshold to the relaxor ferroelectric solid solution single crystal in the light valve to cause the relaxor ferroelectric solid solution single crystal to make a transition from the first state to the second state; and

a unit that heats the relaxor ferroelectric solid solution single crystal in the light valve to or above the Curie temperature to cause the relaxor ferroelectric solid solution single crystal to make a transition from the second state to the first state.

16. (New) The light valve according to claim 15, wherein the relaxor ferroelectric solid solution single crystal completely blocks optical transmission in the first state.

17. (New) A capacitor that uses a relaxor ferroelectric solid solution single crystal, wherein the relaxor ferroelectric solid solution single crystal is capable of making transitions, at temperatures below the Curie temperature, between a first state which has a high permittivity and blocks optical transmission and a second state which has a low permittivity and allows optical transmission, and the relaxor ferroelectric solid solution single crystal undergoes a transition to the second state if an electric field above a threshold is applied in the first state and undergoes a transition to the first state if heated to or above the Curie temperature in the second state, the capacitor comprising:

a unit that applies an electric field above a threshold to the relaxor ferroelectric solid solution single crystal in the capacitor to cause the relaxor ferroelectric solid solution single crystal to make a transition from the first state to the second state; and

a unit that heats the relaxor ferroelectric solid solution single crystal in the capacitor to or above the Curie temperature to cause the relaxor ferroelectric solid solution single crystal to make a transition from the second state to the first state.

18. (New) A piezoelectric device that uses a relaxor ferroelectric solid solution single crystal, wherein the relaxor ferroelectric solid solution single crystal is capable of making transitions, at temperatures below the Curie temperature, between a first state which

has a high permittivity and blocks optical transmission and a second state which has a low permittivity and allows optical transmission, and the relaxor ferroelectric solid solution single crystal undergoes a transition to the second state if an electric field above a threshold is applied in the first state and undergoes a transition to the first state if heated to or above the Curie temperature in the second state, the piezoelectric device comprising:

a unit that applies an electric field above a threshold to the relaxor ferroelectric solid solution single crystal in the piezoelectric device to cause the relaxor ferroelectric solid solution single crystal to make a transition from the first state to the second state; and

a unit that heats the relaxor ferroelectric solid solution single crystal in the piezoelectric device to or above the Curie temperature to cause the relaxor ferroelectric solid solution single crystal to make a transition from the second state to the first state.

19. (New) A relaxor ferroelectric solid solution single crystal, wherein the relaxor ferroelectric solid solution single crystal is capable of making transitions, at temperatures below the Curie temperature, between a first state which has a high permittivity and blocks optical transmission and a second state which has a low permittivity and allows optical transmission, wherein the relaxor ferroelectric solid solution single crystal undergoes a transition to the second state if an electric field above a threshold is applied in the first state.

20. (New) The relaxor ferroelectric solid solution single crystal according to claim 19, wherein the relaxor ferroelectric solid solution single crystal undergoes a transition to the first state if heated to or above the Curie temperature in the second state.

21. (New) The relaxor ferroelectric solid solution single crystal according to claim 19, wherein the relative permittivity of the relaxor ferroelectric solid solution single crystal is 9,000 or above in the first state, and 7,000 or below in the second state.

22. (New) The relaxor ferroelectric solid solution single crystal according to claim 19, wherein the relative permittivity is approximately halved when the relaxor ferroelectric solid solution single crystal makes a transition from the first state to the second state.